Thermosil 4000

Potting and Damping Sealant

Thermosil 4000 is a thixotropic, two-part (A/B), silicone sealant that is applied as a potting compound for low-pressure compressor stator vanes in jet aircraft engines. Its superior elastic properties also allow it to function as a damping compound to minimize vane vibration and stress.

Thermosil 4000 meets the requirements of Pratt & Whitney specification PWA 404-2. It can withstand operating temperatures up to 350˚F (177˚C), and is available in pre-measured void-free A/B injection cartridges.

Application Information

Curing Inhibition

Thermosil 4000 is a platinum-catalyzed addition reaction silicone rubber. The curing mechanism is sensitive to inhibition by amines, sulfur, or tin-catalyzed rubbers.

Mixing and Handling

Thermosil 4000 cartridges are designed to be mixed by automated mixing equipment specific to that purpose. The following containers and tools are approved for handling this material:

- Stainless steel, glass, or high-density polyethylene (HDPE) containers
- Stainless steel or HDPE hand tools
- Stainless steel mixing equipment

Clean all tools and equipment thoroughly after use. Clean with mineral spirits, followed by a solvent rinse.

Applying The Product

A standard application of Thermosil 4000 requires a clean surface and the use of a primer. Clean and prepare surfaces with a solvent wash, degreaser, or abrasion.

Component Matching

Thermosil 4000 is supplied as a 2-part (A/B), precision metered, injection cartridge kit. Mix the product using the specific Part A and Part B components supplied with the kit. Using a different Part A or Part B component may affect product properties.

Automated Mixing

The following are general mixing instructions using an industry-standard automated mixer. FMi Chemical recommends the use of automated mixing equipment for Thermosil 4000 A/B injection cartridges. Thread the Part B dasher rod into the spoker at the top of the Part A cartridge. If applicable, use a ramrod to inject Part B into the middle of Part A. Install the joined cartridge and dasher rod unit into the mixer and adjust the mixer's settings for the correct cartridge size. Mix the material for 70 strokes, or 2.5 minutes (00:02:30) at 90 rpm. When mixing is complete, pull the spoker to the top of the cartridge, unthread the dasher rod, and install the cartridge in a pneumatic or mechanical dispensing gun. For more information about automated mixing procedures, mixing various cartridge sizes, or alternative mixing methods, please contact FMi Chemical.

Tooling

Tool Thermosil 4000 with acetone, methyl ethyl ketone (MEK), or isopropyl alcohol (IPA).

Storage, Shelf Life and Recertification

Thermosil 4000 has a shelf-life of six (6) months from the date of shipment when stored in its original, unopened containers at temperatures not exceeding 90˚F (32˚C). FMi Chemical offers recertification of its products where permitted. Please contact FMi Chemical for details.

PLEASE READ THE SAFETY DATA SHEET BEFORE USING THIS PRODUCT.

Thermosil 4000 Uncured Properties	Part A	Part B
Consistency	Thixotropic	N/A
Color	Beige	Black
Parts A and B mixed at 75˚F (24˚C) at 50% relative humidity		
Mix ratio A:B (Parts by weight)	10:1	
Flow (Inches after 15 minutes)	0.05 in.	
Working Life	1.5 hours	
Extrusion Rate	230 g/min.	
Thermosil 4000 Cured Properties	**Cured 1 hour at 300˚F (149˚C) in mold**	
Color	Black	
Specific Gravity	1.25	
Tensile Strength	850 psi	
Elongation	350%	
Lap Shear Strength	650 psi	
Cohesive Failure	100%	
Hardness	63 Shore A	
Hardness (16 hours at room temperature)	45 Shore A	

Typical manufactured properties should not be used as specifications.

Have a question? Please call (+1) 860-243-3222
FMi Chemical, Inc.
4 Northwood Drive
Bloomfield, CT 06002 USA

fmichemical.com

ISO 9001:2015 and AS9100D certified | Nadcap™ accredited (nonmetallic testing) | ANAB® accredited per ISO/IEC 17025:2017